

REMARKS

Applicants submit the following amendments and remarks in response to the Office Action mailed February 11, 2009. A Petition for a Two-Month Extension of Time extending the time for responding to the Office Action from May 11, 2009 up to and including Monday, July 13, 2009 is submitted herewith.

Claims 21, 23-30, and 41 were rejected in the Action. Claim 21 is amended, claims 28 and 41 are cancelled and no claims are added herein. Therefore, claims 21, 23-27, and 29-30 are pending in the present application. Support for all claim amendments can be found in Applicants' originally filed disclosure in at least paragraphs [0109]-[0110]. As such, no new matter has been added. Applicants set forth remarks relating to the Office Action below.

Applicants would like to thank the Examiner for conducting an interview with Applicants' undersigned attorney on April 1, 2009. The substance of the interview focused on the teachings of U.S. Patent No. 5,370,697 to Baumgartner ("Baumgartner") and U.S. Pat. No. 5,926,685 to Krebs et al. ("Krebs"). This Interview is evidenced by the Examiner's Interview Summary of April 6, 2009.

In the Action, the Examiner objected to claim 28 as being of improper dependent form. Claim 28 has been cancelled herein. Applicants respectfully request that this objection be withdrawn as moot.

Further in the Action, the Examiner rejected claims 21, 23-24, 26-30, and 41 under 35 U.S.C. §103(a) as being unpatentable over *Baumgartner* in view of *Krebs*, and claim 25 under 35 U.S.C. §103(a) as being unpatentable over *Baumgartner* in view of *Krebs* and in further view of U.S. Pat. No. 4,969,907 to Koch et al. ("Koch"). Basically, with respect to claim 21, the Examiner is of the opinion that FIG. 5 of *Baumgartner* shows a vertebral contact element 44 having a resting shape of a dome

convexly extending from orthopedic device 2 such that a gap is formed between the central portion of the contact element and the exterior surface of the baseplate. However, the Examiner acknowledges that *Baumgartner* fails to disclose the outer surface of device 2 having a groove or an osteoconductive feature, such as a coating for attaching the exterior contact element. Thus, the Examiner asserted that *Krebs* in Fig. 8A thereof teaches a recess or groove disposed in an implant surface to secure a metal mesh using a coating.

The Examiner contended it would have been obvious to one of ordinary skill in the art to incorporate a groove in the exterior surface of *Baumgartner* to retain the perimeter or surface of the mesh that contacts the implant surface therein as taught by *Krebs* and utilize a coating or binder held in a groove also taught by *Krebs* with the implant of *Baumgartner* such that exterior surface modifications secure the mesh to the implant stronger and eliminates any detachment of the mesh from the baseplates.

Applicants respectfully assert that a prima facie case of obviousness cannot be made because the cited references do not disclose or suggest each and every limitation in amended claim 21. Independent claim 21 is not obvious over *Baumgartner* in view of *Krebs* because the cited references neither teach nor suggest an artificial intervertebral device having an exterior surface adapted for engaging a vertebral body, the exterior surface having a circular groove disposed therein, and "a vertebral body contact element having a convex central portion and a downwardly bent perimeter, the perimeter corresponding to the circular groove of the at least one of said first exterior surface and said second exterior surface, wherein only said perimeter of said vertebral body contact element is disposed within said groove to thereby aid in securely attaching said

vertebral body contact element to said first exterior surface or said second exterior surface."

Applicants respectfully submit that one skilled in the art would not look to secure element 44 of *Baumgartner* to plate 2 thereof by adding a circular groove to plate 2. The structure of the vertebral body contact element recited in claim 21 is completely different than what the Examiner refers to as a vertebral body contact element in *Baumgartner*. The only disclosure relating to the structure of element 44 shown in Fig. 5 of *Baumgartner* in the entire specification thereof is the term "metal lattice." See col.3, ll.54-55. Further, Fig. 5 (reprinted below) of *Baumgartner* shows element 44 extending over the entire surface of support 2 and also shows the perimeter of element 44 flaring upwards in contrast to the vertebral body contact element having a downwardly bent perimeter corresponding to the circular groove of at least one of the first exterior surface and second exterior surface of the spacer body as recited in amended claim 21. There would be no reason to place a groove in plate 2 of *Baumgartner*, let alone a circular groove, because the entire length of element 44 seems to be structured to conform to the bone of vertebral body 32 that it comes in contact with. Further, because the length of element 44 basically extends further than the edge of plate 2, a groove could not be put in plate 2 to come in contact with the perimeter of element 44. These are all reasons why there is no circular groove in *Baumgartner* and why one skilled in the art would not look to *Baumgartner* for retaining a compressible member in a groove as asserted by the Examiner.

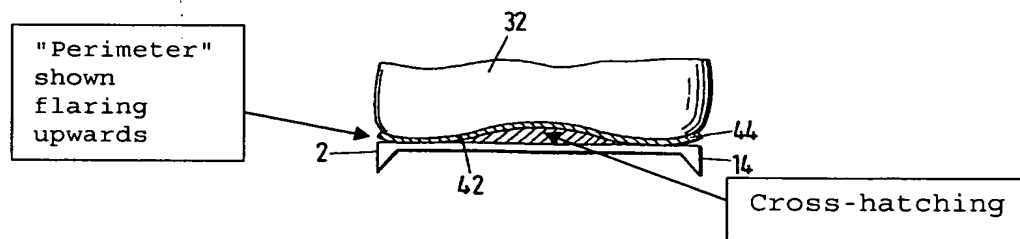


Fig. 5 of *Baumgartner*

Additionally, as shown in Fig. 5 of *Baumgartner* above, a separate convex element is disposed between element 44 and baseplate 2 to aid in maintaining contact between element 44 and vertebral body 32 at a central region thereof. Applicants point the Examiner to a paragraph titled 'Sectional Views' in MPEP § 608.02 stating in part that, "[h]atching must be used to indicate section portions of an object." In the Summary, the Examiner indicated that *Baumgartner* does not make a statement that a structure is evident between element 44 and plate 2, but Applicants assert cross hatching is well known to indicate the existence of structure of an object in a figure. Further, without the addition of this separate element (cross hatched element below element 44), the central region of element 44 may not maintain contact with adjacent vertebral body 32. In contrast, the vertebral body contact element has an initial undeflected conformation as disclosed in paragraph [0109] of the present application reproduced below, which is structured to aid in maintaining contact between the contact element and an adjacent vertebral body and deflects as necessary under anatomical loads to reshape itself to the concave surface of the vertebral endplate. Further still, there is nothing in the specification of *Baumgartner* that describes element 44 having the structure of "a resting shape of a dome convexly extending from the spacer body such that a gap is formed between said central portion of said vertebral body contact element and said first or second exterior surfaces." (emphasis added). There is no "gap" or space or opening between a central portion of element 44 and plate 2 as required by claim 21. As stated above, the separate element fills any space between element 44 and plate 2 such that no gap exists between element 44 and plate 2.

Paragraph [0109] of the present application states:

"Further, each baseplate 10,30 comprises a vertebral body contact element (e.g., a convex mesh 14,34, preferably oval in shape) that is attached to the outwardly facing surface 12,32 of the baseplate 10,30 to provide a vertebral body contact surface. The mesh 14,34 is secured at its perimeter to the outwardly facing surface 12,32 of the baseplate 10,30. The mesh 14,34 is domed in its initial undeflected conformation, but deflects as necessary during insertion of the artificial disc between vertebral bodies, and, once the artificial disc is seated between the vertebral bodies, deforms as necessary under anatomical loads to reshape itself to the concave surface of the vertebral endplate. This affords the baseplate 10,30 having the mesh 14,34 substantially superior gripping and holding strength upon initial implantation as compared with other artificial disc products." (emphasis added).

The above paragraph describes why the vertebral body contact element has a resting shape of a dome. As described above, "[t]he mesh 14,34 is domed in its initial undeflected conformation, but deflects as necessary during insertion of the artificial disc between vertebral bodies." In contrast, *Baumgartner* teaches away from such a structure. *Baumgartner* teaches that element 44 is "adapted to vertebral surface 42, into which osseous tissue of the vertebrae fuses and thus produces a very good and long-lasting connection with the intervertebral disk member." See col.3, 11.55-59. There is no indication here that element 44 has an initial undeflected conformation. The specification of *Baumgartner* seems to only suggest that the lattice naturally conforms to adjacent vertebrae 32 by allowing its outer edges to flare upwardly.

For the foregoing reasons, Applicants submit that independent claim 21 is not obvious over *Baumgartner* in view of *Krebs*. Claims 23-27, and 29-30 depending from independent claim 21 not obvious, *inter alia*, by virtue of their dependence from

independent claim 21. A dependent claim is necessarily narrower than an independent claim from which it properly depends. The other cited reference, namely *Koch* cannot be used to cure the deficiencies of *Baumgartner* and *Krebs*. Therefore, claim 25 is not rendered obvious by *Baumgartner* in view of *Krebs* and *Koch*. Claim 25 is unobvious, *inter alia*, by virtue of its dependence from independent claims 21.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: July 13, 2009

Respectfully submitted,

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